

Applicants submit that the Action does not establish prima facie obviousness of the claimed invention. As set forth in MPEP § 2142, the Examiner bears the burden of factually supporting a prima facie case of obviousness. A rejection based on obviousness must provide a clear articulation of the reason why the claimed invention would have been obvious to one skilled in the art. Rejections based on obviousness cannot be sustained by mere conclusory statements. There must be some articulated reasoning with some rational underpinning to support the conclusion of obviousness.

The Action has not shown that modifying the products of the cited patents would yield predictable results as set forth in MPEP § 2143. The Action further fails to establish that it would be known by one skilled in the art to substitute one feature of the cited patents for another, that modifying the product of the cited patents is known to provide improved results, or that it would have been obvious to modify the products of the cited patents to yield a predictable result with a reasonable expectation of success. Thus, the Action has not established prima facie obviousness.

The Action refers to paragraph 0069 of Brehm et al. as allegedly disclosing the claimed particle size. This passage discloses generally that the particle size range obtained by screening fractions can be used for different products. This passage refers generally to the grain fraction being produced by milling and screening prior to or after the secondary crosslinking step. The surface-crosslinking changes the particle size of the water-absorbent resin for the reasons discussed in the previous response. The surface-crosslinking step includes water or other solvent which changes the particle size. Thus, the particle size of the finished particles of Brehm et al. is not the disclosed particle size before crosslinking. The particle size of the resulting particles of Brehm et al. are not inherently the claimed particle size. Brehm et al. does not take into consideration the changes in the particle size as a result of the surface-crosslinking.

Furthermore, Brehm et al. clearly fails to disclose or suggest the claimed particle size accounting for not less than 90 wt% of the particulate water-absorbent resin composition as in claim 1.

Brehm et al. is specifically directed to an absorbent polymer product containing a cyclodextrin component and a zeolite having a high silicon content that are added and incorporated into the polymer product during the surface-crosslinking step “at the latest”. See, for example, paragraph 0080. Thus, it is clear that the cyclodextrin component is incorporated ionically, covalently, or by mechanical action into the polymer product and chemically bonded to the water-absorbent resin during the surface-crosslinking step. The Action has not established that at least a portion of the cyclodextrin is on the surface of the absorbent polymer product of Brehm et al.

The cyclodextrin and cyclodextrin derivative of Brehm et al. is incorporated ionically, covalently or by mechanical inclusion. This has no relation to the claimed invention. Furthermore, the cyclodextrin and cyclodextrin derivative in combination with the zeolite as an essential component of the polymer product of Brehm et al. clearly produces a polymer product that is not inherently the same as the claimed invention. The inclusion of the cyclodextrin or cyclodextrin derivative and the zeolite produce a specifically defined product according to Brehm et al. with specifically defined properties. The suggestion in the Action that the properties of Brehm et al. are inherently the same as the properties of the claimed particulate water-absorbent resin composition is incorrect and contrary to the teachings of Brehm et al. The properties of the resulting product of Brehm et al. that include the essential cyclodextrin and zeolite before or during the crosslinking step clearly produce a different product from the claimed particulate water-absorbent resin composition.

The Action provides no basis or rationale to support the position that it would have been obvious to modify Brehm et al. to obtain the product according to the claimed invention and that the resulting modified particulate water-absorbent resin would exhibit predictable results. The

Action further fails to provide a basis to show that modifying Brehm et al. would provide a reasonable expectation of success in obtaining a particulate water-absorbent resin having the properties of the present invention.

In view of the above, independent claim 1 is not obvious over Brehm et al. since Brehm et al. does not suggest to one skilled in the art a crosslinked particulate water-absorbent resin composition having the claimed particle size.

Independent claim 4 is also not obvious over Brehm et al. for the reasons discussed in connection with claim 1 and for reciting the specifically defined liquid distribution velocity. As disclosed in the Examples in the specification, the liquid distribution velocity as well as other properties are improved by the particulate water-absorbent resin composition of the present invention compared to the Comparative Examples. The Comparative Examples in the present specification correspond substantially to the crosslinked product of Brehm et al. Thus, the Examples demonstrate that the product obtained according to Brehm et al. is not substantially the same as the claimed particulate water-absorbent resin composition.

The properties of the particulate water-absorbent resin composition of claims 4 and 5 are not the same as or inherent in the product of Brehm et al. As noted above, Brehm et al. specifically requires the cyclodextrin or cyclodextrin derivative and a zeolite having a high silica content that are added before or during the surface-crosslinking step. The resulting product of Brehm et al. is clearly not the same as the claimed particulate water-absorbent resin composition. The Action provides no basis to support the position that the product of Brehm et al. is inherently the same as the claimed particulate water-absorbent resin composition. The Action further fails to present any evidence that one skilled in the art would have a reasonable expectation of obtaining the properties as recited in claims 4 and 5 based on the disclosure of Brehm et al. or that modifying Brehm et al. according to the claimed invention would provide predictable results. Accordingly, claims 4 and 5 are not obvious over Brehm et al.

The dependent claims are also not obvious over Brehm et al. for reciting additional features of the invention that are not disclosed or suggested in Brehm et al. Brehm et al. does not suggest the particulate water-absorbent resin composition of claim 4. Claims 6, 8 and 9 are allowable as depending from claim 4.

Brehm et al. does not suggest the water-absorbent resin composition of claim 4 having a weight average particle diameter and particle size distribution as defined in claim 7, in combination with the features of claim 1 would have been obvious to one skilled in the art. For the reasons discussed above, the particulate water-absorbent resin composition of the claimed invention is clearly different from the resulting product of Brehm et al. Thus, the water absorption capacity without load of claim 10, the absorption capacity under load of claim 11, the saline flow conductivity of claim 12, the liquid-sucking-up rate of claims 13, 14 and 15, and the weight-average particle diameter and particle size distribution of claim 16 are not inherently the same as in the resulting product of Brehm et al.

Brehm et al. clearly fails to disclose or suggest a process of producing a particulate water-absorbent resin composition of claim 18 where the surface-crosslinked water-absorbent resin having a specifically defined particle size range is mixed with a tetra- or more functional polyol. Brehm et al. expressly discloses that the cyclodextrin or cyclodextrin derivative and the alumina are combined with the water-absorbent resin product not later than the surface-crosslinking step. Thus, Brehm et al. expressly excludes the claimed process. Moreover, one skilled in the art would not be motivated to modify the expressly disclosed process of Brehm et al. in a manner contrary to the express teachings with a reasonable expectation of success. Accordingly, the process of claim 18 and the claims depending therefrom are not obvious over Brehm et al.

Rejection of Claims 2 and 3

Claims 2 and 3 are rejected under 35 U.S.C. § 103 as being obvious over Brehm et al. in view of U.S. Patent No. 5,314,420 to Smith et al. Smith et al. is cited for disclosing surface-crosslinking agents.

Smith et al. is relevant only to the extent that various crosslinking agents are disclosed. For the reasons discussed above, Brehm et al. does not disclose or suggest a particulate water-absorbent resin composition having a tetra- or more functional polyol and a tri- or more functional polycation at least on the surfaces. Brehm et al. expressly teaches that the cyclodextrin or cyclodextrin derivative are combined not later than the surface-crosslinking step. Therefore, there is no basis for the position that the cyclodextrin of Brehm et al. is on the surface of the particulate water-absorbent resin composition. Furthermore, Smith et al. does not disclose a polyol and a tri- or more functional polycation on the surface of particles as in claim 2. Smith et al. also fails to disclose the particle size of claim 3, either alone or in combination with the features of claim 2. Smith et al. does not take into consideration the particle size before and after surface-crosslinking. Accordingly, claims 2 and 3 are not obvious over the combination of Brehm et al. and Smith et al.

Rejection of Claims 1-16 and 18-22

Claims 1-16 and 18-22 are rejected under 35 U.S.C. § 103(a) as being obvious over Smith et al. in view of Brehm et al.

The Action provides no basis or rationale for the position that it would have been obvious to screen the surface-crosslinked particles of Smith et al. in accordance with the claimed invention. The Action's conclusion is based on speculation and is not supported by the art of record. Prima facie obviousness is not established by mere conclusory statements without some rational underpinning to support the conclusion. Smith et al. clearly fails to disclose or suggest a

particle size in the range of 850 to 150 μm , but not including 850 μm , accounting for not less than 90 wt% of the particulate water-absorbent resin composition and having a tetra- or more functional polyol at least on the surface of the particles.

The Action further provides no basis for the position that the starch and polyvinyl alcohol of Smith et al. are present on the surface. Applicants are not required to prove that the starch and polyvinyl alcohol are not on the surface as apparently suggested in the Action. The Action is required to provide a reasonable basis for the assertion. The Action has failed to establish prima facie obviousness since no rational basis is provided for the position presented in the Action.

For the reasons noted above, Brehm et al. also fails to disclose the claimed particle size. Modifying Smith et al. according to Brehm et al. as suggested in the Action is contrary to the specific teachings of Brehm et al., and thus, would not have been obvious to one of ordinary skill in the art. Accordingly, independent claim 1 and independent claim 2, and dependent claim 3 are not obvious over the combination of Smith et al. and Brehm et al.

The products produced according to Brehm et al. and Smith et al. are clearly different from the claimed products. Brehm et al. expressly requires the cyclodextrin or cyclodextrin derivative and the alumina added to the product not later than the surface-crosslinking step. Smith et al. is directed to a specifically defined polymer product where the properties are different from the properties recited in independent claims 4 and 5. Contrary to the assertion in the Action, the claimed composition is not met by Smith et al. as suggested on page 7 of the Action. The Action provides no basis for the position that the products are the same. In contrast, Smith et al. discloses a product obtained by a different process with different properties. The assertion in the Action that the product of Smith et al. is the same as the claimed invention is unsupported by the art of record and is based on an unsupported conclusion. The Examples in the present specification clearly demonstrate to one skilled in the art that the

properties are not inherent simply because the particles are surface-crosslinked. There are many factors that determine the properties of the resulting product. One skilled in the art would have no reasonable expectation that the claimed properties are inherent in the product of Smith et al. Accordingly, claims 4, 5 and 10-15 are not inherently the same as the resulting product of Smith et al.

Smith et al. does not disclose a sugar alcohol on the surface of the particulate water-absorbent resin composition as in claims 9 and 19. Smith et al. and Brehm et al. also clearly fail to disclose the average particle diameter and particle size distribution of claims 7, 16 and 20. The Action provides no rational basis for the position that the claimed particle size distribution would have been obvious based on the disclosures of Smith et al. and Brehm et al.

Smith et al. and Brehm et al. also do not disclose a tetra- or more functional polyol in the claimed amounts on the surface of the particles as in claim 8, either alone or in combination with the features of claim 1. The assertion on page 7 of the Action that the claimed heat treatment step so that 10 to 90% of the tetra- or more functional polyol will remain unreacted in the water-absorbent resin composition is inherently present in Smith et al. and Brehm et al. is without merit. The Action provides no basis for the position that this limitation is inherently met. As clearly disclosed in the specification, the composition of the invention considers the free hydroxyl groups from the polyol being present on the surfaces of the water-absorbent resin as being a favorable attribute to provide the enhanced liquid-sucking-up property. See, for example, page 19, lines 12-19, of the present specification. This feature is clearly not suggested in Smith et al. and Brehm et al. There is no suggestion to one skilled in the art that Smith et al. and Brehm et al. intend that 10 to 90% of the polyol will remain unreacted as recited in claim 21. There is no basis presented in the Action that the resulting product of Brehm et al. and Smith et al. inherently have 10 to 90% of the polyol unreacted. Accordingly, claim 21 is not obvious over Smith et al. and Brehm et al.

Rejection of Claims 1-16

Claims 1-16 are rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,127,454 to Wada et al. in view of Brehm et al. or U.S. Patent No. 6,605,673 to Mertens et al. in view of Brehm et al. Applicants respectfully submit that the rejection is confusing and improper by combining two entirely separate rejections into a single rejection. Thus, the Action has clearly not established prima facie obviousness. Furthermore, the Action discusses Wada et al. and Mertens et al. collectively, although these cited references are not used collectively in the rejections.

Wada et al. and Mertens et al. do not disclose or suggest a tetra- functional polyol on the surface of the particles and the claimed particle size. Page 8 of the Action expressly recognizes that Wada et al. and Mertens et al. do not disclose either of these claimed features which define the claimed invention. Thus, by the Examiner's admission, Wada et al. and Mertens et al. have no relation to the claimed invention.

Wada et al. and Mertens et al. are relevant only in disclosing various surface-crosslinking agents. Wada et al. and Mertens et al. provide no suggestion to one skilled in the art to provide at least a portion of the tetra- or more functional polyol at least on the surfaces of the particles as in the claimed invention. One skilled in the art in reviewing Wada et al. and Mertens et al. would have no reasonable expectation of improving the properties of the resulting product, and thus, have no motivation to modify the products of Wada et al. and Mertens et al. as in the claimed invention.

The Action suggests that it would have been obvious to modify the product of Wada et al. and Mertens et al. to have the claimed particle size. This position is not supported by the art of record and it is based on an unsubstantiated conclusion. The Action provides no basis or rationale for the position that it would have been obvious to modify Wada et al. and Mertens et

al. Brehm et al. discloses generally a particle size range but clearly fails to suggest the specifically defined particle size range. Brehm et al. also provides no suggestion to one skilled in the art that the specifically defined particle size range of claim 1 would be expected to provide improved properties when the particulate water-absorbent resin composition contains a tetra- or more functional polyol at least on the surfaces. Thus, one skilled in the art would have no reasonable expectation of success in improving the properties of the composition based on the disclosure of Brehm et al. either alone or in combination with Smith et al. and Mertens et al. Accordingly, claim 1 is not obvious over the combination of the cited patents.

Smith et al., Mertens et al. and Brehm et al. either alone or in combination do not suggest a tetra- or more functional polyol and a tri- or more functional polycation at least on the surfaces of a particulate water-absorbent resin composition as in claim 2. The Action presents no basis to support the conclusion that it would have been obvious to modify Wada et al. and Mertens et al. according to Brehm et al. or that the resulting combination would result in the claimed invention. The conclusory statement presented in the Action is unsupported by the art of record. Accordingly, claims 2 and 3 are not obvious over the combination of the cited patents.

The resulting products of Wada et al. and Mertens et al. and Brehm et al. are clearly different from the claimed particulate water-absorbent resin composition. The Action provides no basis for the position that the products are the same or that the properties are inherently the same. The products obtained according to Wada et al., Mertens et al. and Brehm et al. are prepared by specifically defined process steps, and thus, produce a product that is different from the claimed product. Accordingly, the products of Wada et al., Mertens et al. and Brehm et al. do not inherently have the claimed liquid distribution velocity as in claim 4, or the OH/C ratio of claim 5. Furthermore, the Action provides no basis that one skilled in the art would have a reasonable expectation that these features provide improved properties of the particulate water-absorbent resin or that modifying Wada et al. and Mertens et al. would provide a predictable

liquid distribution velocity or OH/C ratio. Accordingly, claims 4 and 5 are not obvious over the combination of the cited patents.

Claims 6-16 are also not obvious for reciting additional features of the invention and for depending from an allowable base claim. The combination of Wada et al., Mertens et al. and Brehm et al. does not suggest the average particle diameter and particle size distribution of claim 7, the amount of the tetra- or more functional polyol of claim 8, the sugar alcohol of claim 9, the properties of the resulting particulate water-absorbent resin composition of claims 10-16, either alone or in combination with the features of claim 1.

In view of the above comments, Applicants submit that the claims are not obvious over the art of record. Accordingly, reconsideration and allowance are requested.

Respectfully submitted,



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